Curtis Lin, Ph.D.

curtiscjlin@outlook.com| https://linchunjen.github.io/ | Greater Seattle Area

SUMMARY

With over a decade's expertise in Systems Biology and Data Science, I specialize in formulating data strategies using methodologies like Artificial Intelligence, Machine Learning, -Omics Analysis, and Natural Language Processing to expedite early discovery and optimize early- and late-stage development of biologics. My professional journey includes the successful discovery of therapeutic antibodies, building data platforms to facilitate process development of Antibody-Drug Conjugates (ADC), and managing quality control in biologics manufacturing. My proven leadership abilities in strategic planning, team building, operational risk reduction, and resource management, combined with my technical skills, establish me as a valuable contributor in the biologics sector.

EXPERIENCE

Pfizer Inc (Seagen), Bothell WA – Associate Director, Data Science, ADC Dev. 01/2021 – Present

- Led the development of comprehensive data strategies using advanced analytics, Machine Learning (ML), Deep Learning (DL), and simulations, with the goal of accelerating process and drug development, enhancing manufacturing processes, and improving safety through risk reduction
- Orchestrated and led a team in creating a Natural Language Processing (NLP) platform to enhance the management and sharing of organizational knowledge
- Constructed a data pipeline, developed digital solutions, and crafted visualization tools to aid in the process and product development of monoclonal antibodies (mAb) and Antibody-Drug Conjugates (ADC)
- Managed project timelines by overseeing planning, coordination, allocation of resources, and mitigating risks for time-critical projects
- Established and managed a Data Analytics team of 7 members, setting team operation strategies

AbVision Inc, Milpitas CA – Associate Director, Research and Development 06/2018 – 12/2020

- Spearheaded early-phase discovery and preclinical development programs for therapeutic monoclonal and bispecific antibodies in Immuno-oncology, resulting in 3 patents, and 2 company press releases
- Pioneered the development of a Machine Learning-assisted platform to expedite therapeutic antibody discovery, utilizing Next Generation Sequencing (NGS), Sequencing Analysis, and Machine Learning algorithms.
- Forged academic and industry partnerships to bolster pipeline programs and create detailed development plans.
- Effectively prioritized projects, allocated resources, orchestrated team coordination, and offered technical leadership to ensure adherence to timelines.
- Supervised and provided resources support to scientists and RAs, managing a team of over 10 members.

SanBio Inc, Mountain View CA – Scientist II, Research/Quality Control 06/2016 – 06/2018

- Championed the implementation of data-driven biomarker strategies and oversaw development projects to enhance clinical manufacturing operations
- Devised biomarker-based qPCR assays to aid in-process control and fostered process validation of cell manufacturing and scale-up production for phase 2/3 clinical trial
- Orchestrated the development, optimization, and transition of validated assays to the GMP environment
- Collaborated with cross-functional teams to supervise ongoing product testing in CDMO and CTL
- Reviewed a range of documents including standard procedures (SOP), deviations, tech transfer reports, batch records, qualification reports, validation reports, and specifications during cell product development

MD Anderson Cancer Center, Systems Biology, Houston TX – Postdoc Fellow 08/2011 – 10/2015

- Led a cross-institutional team in successfully executing a $3.5 million Department of Defense-funded project to systemically assess homologous recombination status and PARP inhibitor sensitivity, resulting in 1 patent, 3 publications, 2 gene expression dataset submissions, and an AACR award.
- Formulated Systems Biology/Data Science strategies and secured funding from the Cancer Prevention Research Institute of Texas to develop biomarkers and compounds for effectively targeting DNA damage response defective cancers. This helped uncover Mechanisms of Action (MOA) leading to 1 patent and 2 publications
- Collaboratively developed an isotope-conjugated antibody to improve non-invasive MicroPET/CT Imaging detection and disease progression monitoring of Triple-Negative Breast Cancer (TNBC)

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EDUCATION

Master in Information and Data Science, University of California, Berkeley, Berkeley, CA **2018-2020**
Postdoc Fellow in Systems Biology, University of Texas MD Anderson Cancer Center, Houston, TX **2011-2015**
Ph.D. in Biochemistry and Cell Biology, Rice University, Houston, TX **2006-2011**
M.S. in Biochemical Sciences, National Taiwan University, Taipei, Taiwan **2000-2002**
B.S. in Chemistry, National Cheng Kung University, Tainan, Taiwan **1996-2000**

PATENTS

- **Anti-PD-1/CD47 Bispecific Antibody and use thereof** (WO/2022/147365A1) **2021**
  Lin C.C., Chao C.C., Chen C.H., Zhang G.G., Yan G.
- **Monoclonal antibodies that target human CD47 protein** (WO/2021/102376) **2021**
  Lin C.C., Chao C.C., Chen C.H., Zhang G.G., Yan G.
- **Monoclonal antibodies that target human OX40** (WO/2021/102372) **2021**
  Lin C.C., Chao C.C., Chen C.H., Zhang G.G., Yan G.
- **Replication stress response biomarkers for immunotherapy response** (WO/2019/173456) **2019**
  McGrail D., Lin S.Y., Pilie P, Jonasch E, Lin C.C.
- **Gene signature to predict homologous recombination (HR) deficient cancer** (WO/2014/138101) **2014**
  Lin C.C., Peng G., Lin S.Y., Mills G.B.

AWARDS

- **Susan G. Komen® Scholar-in-Training Awards**, American Association for Cancer Research **2014**
- **Travel Award of 5th Annual NIH National Graduate Research Festival**, National Institute of Health **2011**
- **Dean of Wiess School of Natural Sciences Travel Grant**, Rice University **2008**

NEWS ARTICLES

- AbVision Inc. BioSuperior™ Anti-CD47 Bispecific Antibody, AVI-525B and AVI-535B
  https://www.biospace.com/article/biosuperiortm-anti-cd47-bispecific-antibody-avi-525b-and-avi-535b-/
- AbVision Inc. BioSuperior Anti-CD47 Therapeutic Antibody (AVI-105)
  https://www.biospace.com/article/biosuperior-anti-cd47-therapeutic-antibody-avi-105-/

DATA SUBMISSION

Gene Expression Omnibus (GEO) database: GSE54269, GSE59227

PUBLICATIONS

- McGrail DJ*, Lin CC*, Dai H, Mo W, Stephan C, Davies P, Lu Z, Lee JS, Lin SY (2018) Defective replication stress response is inherently linked to the cancer stem cell phenotype, Cell Reports, 15;23(7):2095-2106
- McGrail DJ, Lin CC, Garnett J, Liu Q, Mo W, Dai H, Lu Y, Yu Q, Ju Z, Yin J, Vellano CP, Hennessy B, Mills GB, Lin SY (2017) Improved prediction of PARP inhibitor response and identification of synergizing agents through use of a novel gene expression signature generation algorithm. npj Systems Biology and Applications 3, 8
- Wang W, Zhao J, Wen X, Lin CC, Li J, Huang Q, Yu Y, Lin SY, Li C (2017) MicroPET/CT Imaging of AXL Downregulation by HSP90 Inhibition in Triple-Negative Breast Cancer. Contract Media & Molecular Imaging, 1686525
- Mo W, Liu Q, Lin CC, Dai H, Peng Y, Liang Y, Peng G, Meric-Bernstam F, Mills GB, Li K, Lin SY (2016) mTOR inhibitors suppress homologous recombination repair and synergize with PARP inhibitors via regulating SUV39H1 in BRCA-proficient triple-negative breast cancer. Clinical Cancer Research 22, 1699
- Peng Y, Dai H, Wang E, Lin CC, Mo W, Peng G, Lin SY (2015). TUSC4 functions as a tumor suppressor by regulating BRCA1 stability. Cancer Res., 75(2):378-86.
- Peng G*, Lin CC*, Mo W.*, Dai H, Park Y, Kim S, Mo Q, Peng Y, Siwko S, Hu R, Lee J, Hennessy B, Hanash S, Mills GB, Lin SY (2014) A molecular portrait of the homologous recombination DNA repair via genome-wide transcriptome profiling. Nature Communications, 5, 3361 (co-first author)

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- Johnson C, Lin CC, Stern M (2012). Ras-dependent and Ras-independent effects of PI3K in Drosophila motor neurons. Genes, Brain and Behavior, 11, 848-858.
- Lin CC, Summerville J, Howlett E, Stern M (2011) The metabotropic glutamate receptor activates the lipid kinase PI3K in Drosophila motor neurons through the calcium/calmodulin-dependent protein kinase II and the nonreceptor tyrosine protein kinase DFak. Genetics, 188, 601
- Chen Y, Fujita T, Zhang D, Doan H, Pinkaew D, Liu Z, Wu J, Koide Y, Chiu A, Lin CC, Chang JY, Ruan KH, Fujise K (2011). Physical and functional antagonism between tumor suppressor protein p53 and fortilin, an anti-apoptotic protein. J. Biol. Chem., 286, 32575
- Howlett E, Lin CC, Lavery W, Stern M (2008). A PI3 kinase-mediated negative feedback regulates Drosophila motor neuron excitability. PloS Genetics, 4, e1000277.
- Chang JY, Lin CC, Salamanca S, Pangburn MK, Wetsel RA (2008). Denaturation and unfolding of human Anapylatoxin C3a: An unusually low covalent stability of its native disulfide bonds. Arch Biochem Biophys, 480, 104-110.
- Lin CC, Chang JY (2007) Pathway of oxidative folding of bovine alpha-interferon: predominance of native disulfide-bonded folding intermediates. Biochemistry, 46, 3925
- Graidist P, Yazawa M, Tonganunt M, Nakatomi A, Lin CC, Chang JY, Phongdara A, Fujise K (2007). Fortilin binds Ca2+ and blocks Ca2+-dependent apoptosis in vivo. Biochem J., 408,181-191.
- Lin CC, Chang JY (2006) Pathway of Oxidative Folding of Secretory Leucocyte Protease Inhibitor: An 8-disulfides protein exhibits a unique mechanism of folding. Biochemistry, 45, 6231
- Lin CC, Lu BY, Chang JY (2006). Conformational stability of Secretory Leucocyte Protease Inhibitor: a protein with no hydrophobic core and very little secondary structure. Biochim Biophys Acta. 1764, 1286-1291.
- Chang JY, Lu BY, Lin CC, Yu C. (2006). Fully oxidized scrambled isomers are essential and predominant folding intermediates of Cardiotoxin-III. FEBS Lett., 580, 656.

INVITED PRESENTATIONS

- LIN CC (2023) Integrating All Upstream Data, BioProcess International Europe 2023, Amsterdam, Netherlands
- LIN CC (2023) Integrating Upstream Process Data, BioProcess International West 2023, San Diego CA, USA
- Bullock Z, LIN CC (2023) Next generation control charting in TOPS: automating data collection, maintenance, and visualization to save time and allow effective method monitoring, Seagen Science Day, Bothell WA, USA
- LIN CC, Surabattula D, Stewart U (2021) Crowdsourcing: Harnessing Tribal Knowledge for TOPS Data Dictionary, 2021 Seagen Science Day, Bothell WA, USA

CONFERENCE POSTERS

- Bullock Z, Lin CC (2023) Advancing Computational Fluid Dynamics (CFD) for Facilitating ADC Process Development, 2023 Seagen Science Day, Bothell WA, USA
- Klemisch J, Dickinson M, Garry J, Lin CC (2023) Enhancing Knowledge Sharing through Utilization of Natural Language Processing (NLP), 2023 Seagen Science Day, Bothell WA, USA
- Lin CC, O'Brien S, Clarke H (2022) Clone Stability Prediction with Machine Learning and Data Centric Approach, 2022 Seagen Science Day, Bothell WA, USA
- Lin CC, Dai H, Mo W, Lin SY (2015) The Defects of Replication Stress Response Facilitate the Formation of Tumor-initiating cells. Exploring DNA Repair Pathways as Targets for Cancer Therapy Conference, Cancun, Mexico
- Lin CC, Dai H, Lin SY (2014) The replication stress response defect is associated with tumor-initiating cell formation. AACR Annual Meeting 2014. San Diego CA, USA
- Lin SY, Peng G, Lin CC, Mo W, Mills GB (2013) A robust gene signature predicting deficient homologous recombination DNA repair. 4th International Conference on Biomarkers & Clinical Research. Philadelphia PA, USA
- Lin CC, Summerville J, Stern M (2010) CaMKII and FAK regulate neuronal homeostasis via PI3K-mediated negative feedback in Drosophila nervous system. 5th Annual NIH National Graduate Student Research Festival. National Institute of Health, Bethesda MD, USA